

We Claim:

1. An interactive vehicular mirror system comprising:  
an interior rearview mirror assembly having a mirror casing and a reflective element, said mirror assembly being adapted to mount at an interior portion of the vehicle, and said reflective element having a rearward field of view when said interior mirror assembly is mounted in a vehicle;  
a display element provided at said interior mirror assembly; and  
a user actuatable selector element associated with a function and provided at said reflective element, said selector element actuating said display element to display an image associated with said function when said selector element is actuated.
2. The interactive vehicular mirror system according to Claim 1, wherein said reflective element comprises a prismatic reflective element.
3. The interactive vehicular mirror system according to Claim 1, wherein said reflective element comprises an electrochromic reflective element.
4. The interactive vehicular mirror system according to Claim 1, wherein said selector element is provided on an outer surface of said reflective element.
5. The interactive vehicular mirror system according to Claim 4, wherein said selector element is located at a lower portion of said reflective element.
6. The interactive vehicular mirror system according to Claim 4, wherein said selector element is located at a lower perimeter portion of said reflective element.
7. The interactive vehicular mirror system according to Claim 1, wherein said display element is re-configurable whereby said display element may be associated with more than one function.
8. The interactive vehicular mirror system according to Claim 4, wherein said selector element comprises a touch sensitive element.

9. The interactive vehicular mirror system according to Claim 8, wherein said touch sensitive element is responsive to at least one of heat, capacitance, inductance, and resistance.
10. The interactive vehicular mirror system according to Claim 8, wherein said touch sensitive element comprises a transparent touch sensitive element.
11. The interactive vehicular mirror system according to Claim 10, wherein said touch sensitive element comprises a transparent conductive coating.
12. The interactive vehicular mirror system according to Claim 11, wherein said transparent conductive coating comprises one of indium tin oxide, tin oxide, doped tin oxide, and doped zinc oxide.
13. The interactive vehicular mirror system according to Claim 10, wherein said touch sensitive element comprises a plurality of coatings.
14. The interactive vehicular mirror system according to Claim 13, wherein said plurality of coatings comprises a plurality of stacked coatings.
15. The interactive vehicular mirror system according to Claim 8, further comprising another display element in association with said selector element, said another display element being proximate said touch sensitive element, and said another display element displaying an image indicating said function of said touch sensitive element.
16. The interactive vehicular mirror system according to Claim 15, wherein said image of said another display element comprises an icon.
17. The interactive vehicular mirror system according to Claim 15, wherein said another display element comprises one of a liquid crystal display, an organic light emitting diode display, an inorganic light emitting diode display, a plasma display, a fluorescent display, and an electroluminescent display.

18. The interactive vehicular mirror system according to Claim 15, wherein said another display element is transparent in at least one state.

19. The interactive vehicular mirror system according to Claim 1, wherein said user actuatable selector element comprises a transparent touch sensitive element.

20. The interactive vehicular mirror system according to Claim 19, wherein said reflective element includes a semitransparent reflector, and said display element is positioned behind said semitransparent reflector.

21. The interactive vehicular mirror system according to Claim 20, wherein said semitransparent reflector comprises a metal coating and a transparent conductor.

22. The interactive vehicular mirror system according to Claim 1, wherein said display element is provided at said reflective element spaced from said touch sensitive element.

23. The interactive vehicular mirror system according to Claim 22, wherein said display element comprises a light emitting display.

24. The interactive vehicular mirror system according to Claim 23, wherein said light emitting display comprises one of a liquid crystal display, an electrochromic display, an organic light emitting diode display, an inorganic light emitting diode display, a plasma display, a fluorescent display, and an electroluminescent display.

25. The interactive vehicular mirror system according to Claim 23, wherein said display element is disposed behind said reflective element.

26. The interactive vehicular mirror system according to Claim 23, wherein reflective element includes a reflector, a portion of said reflector being at least partially removed to form a window, said display element being disposed behind said window and viewable through said window when said display element is actuated.

27. The interactive vehicular mirror system according to Claim 23, wherein reflective element comprises a semitransparent reflective element.

28. An interactive vehicular mirror system comprising:  
an interior rearview mirror assembly having a mirror casing and a reflective element, said mirror assembly being adapted to mount at an interior portion of the vehicle, and said reflective element having a rearward field of view when said interior mirror assembly is mounted in a vehicle;  
a plurality of display elements; and  
a respective plurality of touch sensitive elements associated with said plurality of display elements and provided at said interior mirror assembly, each of said touch sensitive elements having at least one function associated therewith, and each of said display elements displaying an image indicating said at least one function of a respective touch sensitive element at least when said respective touch sensitive element is actuated.

29. The interactive vehicular mirror system according to Claim 28, further comprising another display element provided at said interactive vehicular mirror system, at least one of said touch sensitive elements activating said another display element and actuating said another display element to display at least one image associated with said function of said at least one touch sensitive element when said at least one touch sensitive element is actuated.

30. The interactive vehicular mirror system according to Claim 29, wherein said another display element is positioned at said reflective element.

31. The interactive vehicular mirror system according to Claim 30, wherein said another display element is positioned behind said reflective element and is viewable through said reflective element at least when said another display element is actuated.

32. The interactive vehicular mirror system according to Claim 28, wherein said touch sensitive elements are provided on an outer surface of said reflective element.

33. The interactive vehicular mirror system according to Claim 28, wherein at least one of said display elements comprises a re-configurable display element whereby said re-configurable display element may be associated with more than one function.

34. The interactive vehicular mirror system according to Claim 32, wherein at least one of said touch sensitive element comprises a transparent touch sensitive element.

35. The interactive vehicular mirror system according to Claim 34, wherein said touch sensitive element is responsive to at least one of heat, capacitance, inductance, and resistance.

36. The interactive vehicular mirror system according to Claim 28, wherein said touch sensitive element comprises a transparent touch sensitive element.

37. The interactive vehicular mirror system according to Claim 36, wherein said transparent touch sensitive element includes a transparent conductive coating.

38. The interactive vehicular mirror system according to Claim 37, wherein said transparent conductive coating comprises one of indium tin oxide, tin oxide, doped tin oxide, and doped zinc oxide.

39. The interactive vehicular mirror system according to Claim 36, wherein said touch sensitive element comprises a plurality of coatings.

40. The interactive vehicular mirror system according to Claim 39, wherein said plurality of coatings comprises stacked coatings.

41. The interactive vehicular mirror system according to Claim 28, wherein said plurality of display elements are proximate respective selector elements.

42. The interactive vehicular mirror system according to Claim 41, wherein each of said plurality of display elements comprises one of a liquid crystal display, an organic light

emitting diode display, an inorganic light emitting diode display, an electrochromic display, a plasma display, a fluorescent display, and an electroluminescent display.

43. The interactive vehicular mirror system according to Claim 42, wherein said plurality of display elements are transparent at least in one state.

44. The interactive vehicular mirror system according to Claim 29, wherein said another display element displays at least one video image.

45. The interactive vehicular mirror system according to Claim 44, wherein said video image comprises one of (i) a rearward field of view image, (ii) an internal cabin monitoring image, (iii) a teleconferencing image, (iv) a remote monitoring image, (v) an emergency recording image, and (vi) a forward field of view image.

46. The interactive vehicular mirror system according to Claim 29, wherein said another display element displays at least one of (i) a rain sensor operation display, (ii) a telephone information display, (iii) a highway status information display, (iv) a blind spot indicator display, (v) a hazard warning display, (vi) a vehicle status display, (vii) a page message display, (viii) a speedometer display, (ix) a tachometer display, (x) an audio system display, (xi) a fuel gauge display, (xii) a heater control display, (xiii) an air conditioning system display, (xiv) a status of inflation of tires display, (xv) a trailer tow image display, (xvi) an e-mail message display, (xvii) a compass display, (xviii) an engine coolant temperature display, (xix) an oil pressure display, (xx) a cellular phone operation display, (xxi) a global positioning system display, (xxii) a weather information display, (xxiii) a temperature display, (xxiv) a traffic information display, (xxv) a telephone number display, (xxvi) a fuel status display, (xxvii) a battery condition display, (xxviii) a time display, (xxix) a train approach warning display, and (xxx) a toll transaction display.

47. The interactive vehicular mirror system according to Claim 29, wherein said another display is adapted to display scrolling images.

48. The interactive vehicular mirror system according to Claim 29, wherein said another display element displays at least two images.

49. The interactive vehicular mirror system according to Claim 29, wherein said reflective element comprises a prismatic reflective element.

50. The interactive vehicular mirror system according to Claim 49, wherein said reflective element includes a reflector on a back surface of said reflective element, said reflector being at least partially removed to define a window, said another display being positioned at least partially behind said window, and said image associated with said function being viewable at least when said another display displays said image associated with said function.

51. The interactive vehicular mirror system according to Claim 29, wherein said reflective element comprises an electrochromic reflective element.

52. The interactive vehicular mirror system according to Claim 51, wherein said reflective element includes an electrochromic medium and a reflector, a portion of said reflector being at least partially removed, and said another display element being positioned behind said portion whereby said image associated with said function is viewable through said reflective element at least when said another display element displays said image associated with said function.

53. An interactive vehicular mirror system comprising:  
an interior mirror assembly having a mirror casing and a reflective element, said interior mirror assembly being adapted to mount at an interior portion of a vehicle, said reflective element having a rearward field of view when said interior rearview mirror assembly is mounted to the vehicle and a plurality of user actuatable selector elements;  
a display element; and  
each of said user actuatable selector elements having at least one function associated therewith, at least one of said selector elements activating said display element and actuating said display element to display at least one image associated with said function of said at least one selector element.

54. The interactive vehicular mirror system according to Claim 53, wherein said image is selected from the group consisting of (i) a telephone conference image (ii) a highway status information image, (iii) a blind spot information image, (iv) a hazard warning information image, (v) a vehicle status information image, (vi) a page messaging information image, (vii) a speedometer information image, (viii) a tachometer information image, (ix) a remote transaction information image, (x) an audio system information image, (xi) a fuel gauge information image, (xii) a heater control information image, (xiii) a ventilation system information image, (xiv) a status of inflation of tires information image, (xv) a trailer tow image, (xvi) an e-mail message information image, (xvii) a compass information image, (xviii) an engine coolant temperature information image, (xix) an oil pressure information image, (xx) a cellular phone operation information image, (xxi) a global positioning system information image, (xxii) a weather information image, (xxiii) a temperature information image, (xxiv) a traffic information image, (xxv) a telephone number information image, (xxvi) fuel status information image, (xxvii) battery condition information image, (xxviii) time information image, and (ixxx) stock information image.

55. The interactive vehicular mirror system according to Claim 53, wherein said display element displays at least one of (i) a rearward field of view image, (ii) an internal cabin monitoring image, (iii) a teleconferencing image, (iv) a remote monitoring image, (v) an emergency recording image, and (vi) a forward field of view image.

56. The interactive vehicular mirror system according to Claim 53, further comprising an image capturing device adapted for mounting to the vehicle, said selector elements including a rear vision selector element, said image capturing device detecting at least one of an internal cabin image and an image rearward of the vehicle and sending an image signal based on said at least one of an internal cabin image and an image rearward of the vehicle to said display element for display said at least one of an internal cabin image and an image rearward of the vehicle by said display element when said rear vision selector element is actuated.

57. The interactive vehicular mirror system according to Claim 56, further comprising an exterior sideview mirror assembly, said image capturing device being



positioned at said exterior sideview mirror assembly for capturing an image rearward of the vehicle.

58. The interactive vehicular mirror system according to Claim 53, wherein said interior rearview mirror assembly further includes at least one accessory selected from the group consisting of (i) a trainable garage door opener, (ii) a universal home access system, (iii) an INTERNET interface, (iv) a remote keyless entry receiver, (v) a video device, (vi) a rain sensor, (vii) a compass sensor, (viii) a trip computer, (ix) an intrusion detector, (x) a phone, (xi) an interior light, (xii) a seat occupancy detector, (xiii) a phone attachment, (xiv) an electro-optic reflective mirror element, (xv) an electrochromic reflective mirror element, (xvi) a headlamp controller, (xvii) a printer, (xviii) a transmitter/receiver, (xix) a modem, (xx) an instrumentation light, (xxi) a console light, (xxii) a solar panel, (xxiii) a windshield portion defogger device, (xxiv) an antenna, (xxv) a loudspeaker, (xxvi) a microphone, (xxvii) a digital message recorder, (xxviii) a magnetic tape message recorder, (xxix) a phone control panel, (xxx) a digital storage device, and (xxx) a GPS/navigational system.

59. The interactive vehicular mirror system according to Claim 53, wherein said selector elements comprise touch sensitive elements.

60. The interactive vehicular mirror system according to Claim 59, wherein each of said touch sensitive elements is responsive to at least one of heat, capacitance, inductance, and resistance.

61. The interactive vehicular mirror system according to Claim 58, wherein each of said touch sensitive elements includes interposed between said touch sensitive elements and said reflective element a display element, said display elements of said touch sensitive elements displaying an image indicating a function of said touch sensitive element.

62. The interactive vehicular mirror system according to Claim 61, wherein said image comprises an icon.

63. The interactive vehicular mirror system according to Claim 61, wherein each of said display elements of said touch sensitive elements comprises one of a liquid crystal

display, an organic light emitting diode display, an inorganic light emitting diode display, a plasma display, a fluorescent display, an electrochromic display, and an electroluminescent display.

64. The interactive vehicular mirror system according to Claim 61, wherein at least one of said touch sensitive elements comprises a re-configurable touch sensitive element whereby said re-configurable touch sensitive element may be associated with one than one function.